



WEST NILE VIRUS

1. **Agent:** WNV is a mosquito-borne flavivirus.
2. **Identification:**
 - a. **Symptoms:** Most infections may include fever, 80% are asymptomatic. Mild to severe headache, nausea, vomiting, muscle weakness, stiff neck, altered consciousness, rash, limb paralysis, coma and death.
 - b. **Clinical Syndromes:** Asymptomatic (detected most commonly in a blood donor), WNV Fever (WNVF) and neuroinvasive disease which includes: meningitis, encephalitis, and acute flaccid paralysis (AFP)
 - c. **Diagnosis:**
 - WNV specific IgM antibodies in CSF or acute-phase serum suggest recent infection. A four-fold rise in titer in paired acute and convalescent sera by enzyme immunoassay and or immunofluorescence assay (IFA) confirms recent infection.
 - Other diagnostics: reverse transcriptase – polymerase chain reaction (for CSF only) rarely used in human diagnostics and plaque reduction neutralization (confirmatory test completed at the State or CDC level).
3. **Incubation:** Usually 3-14 days
4. **Reservoir:** Birds are the primary reservoirs for WNV.
5. **Source:** Infective mosquito. WNV is also transmitted through WNV-infected blood products and organ tissue, and also potentially transplacentally and through blood screening. All blood products and organ donations are screened for the presence of WNV.
6. **Transmission:** Bite of an infective mosquito.
7. **Communicability:** Not transmitted person-to-person

8. **Specific treatment:** Supportive
9. **Immunity:** Thought to be lifelong

REPORTING PROCEDURES

1. Reportable (Title 17, Section 2500 and 2505, California Code of Regulations). Cases of persons with any positive WNV test must be reported within one working day using a standard Confidential Morbidity Report; the CMR may be faxed to the DPH Morbidity Unit or called in during normal business hours.

2. **Report Form:**

[WEST NILE VIRUS \(WNV\) INFECTION CASE REPORT \(CDPH 8687\)](#)

[WEST NILE VIRUS INFECTION SUPPLEMENTAL FORM \(acd-wnvsupp\)](#)

[WEST NILE VIRUS ACTIVE SURVEILLANCE LABORATORY SUBMITTAL FORM \(acd-wnvlabssubmit\)](#)

3. **Epidemiologic and Clinical Data:**

- a. If case was bitten by mosquitoes or was in a mosquito infested area during incubation period, identify as precisely as possible, (address, city, zip) the area where the exposure occurred. Note outdoor activities during dusk.
- b. Increased mortality of dead crows or other corvid species may indicate the presence of WNV activity.
- c. Presence of other human cases or equine cases in the same region.
- d. Presence of other human cases or equine cases in the same region.
- e. Presence of other human cases or equine cases in the same region.
- f. Travel up to 3 weeks prior to onset.
- g. Occupation and hobbies.



- h. History of organ transplantation or recent receipt of blood products.
- i. Results of WNV serum serology and CSF tests, if available.

CONTROL OF CASE, CONTACTS & CARRIERS

Investigate within 1 day. ACDC reviews case investigation and informs the appropriate local mosquito abatement district and State of CA.

CASE: No restrictions.

CONTACTS: No restrictions

CARRIERS: Not applicable

PREVENTION-EDUCATION

1. Prevent mosquito bites by using screens on windows, and wear protective clothing and repellents if outdoor activity occurs in areas with mosquito infestation.
2. Eliminate mosquito breeding sites by emptying containers with stagnant water (i.e., bird baths, old tires, potted plants, swimming pools, pet bowls and other containers).
3. Control adult mosquito population by applying appropriately labeled pesticides. Control of larva and eliminating large breeding areas should be referred to mosquito abatement agencies.
4. Use insect repellent products with no more than 35% DEET for adults and less than 10% to 30% for children. Picaridin and oil of lemon eucalyptus have also shown to offer long-lasting protection against mosquito bites.

DIAGNOSTIC PROCEDURES

Clinical and epidemiologic history required to aid the laboratory in test selection.

See [WEST NILE VIRUS ACTIVE SURVEILLANCE LABORATORY SUBMITTAL FORM \(acd-wnvlabsbmit\)](#)

1. **Serology:** Paired acute and convalescent sera required.

Container: Serum separator tube (SST).

Test Requisition and Report Form H-3021

Test requested: Arbovirus antibodies, IgG and IgM.

Material: Serum.

Amount: >2 ml of blood.

Storage: Refrigerate immediately.

Remarks: Collect first (acute) blood specimen as soon as possible. Collect second (convalescent) blood approximately 2 weeks after the first. Send each specimen to Public Health Laboratory as soon as it is collected.

2. **CSF:** Antibodies, IgG and IgM

Amount: 1-2ml CSF

Storage: Refrigerate